



AECT PA Letter Sept 30 2014.docx

September 30, 2014

1700 Lincoln Street
Suite 1550
Denver, CO 80203
USA
+1 720 566 9920
paconsulting.com

Auckland Electricity Consumer Trust
PO Box 109626
Auckland 1149

Dear Trustees,

State of the Auckland Electricity reticulation assets

As a requirement of the “New Deed Recording Essential Operating Requirements” between Vector Ltd (Vector) and the Auckland Energy Consumer Trust (AECT), Vector is required to undertake an annual independent review on the state of the Auckland electricity reticulation assets (the Vector network), and to provide the report on the outcome of this review to the AECT.

PA Consulting Group Ltd (PA) was engaged by Vector to undertake the review of the state of the Vector network for 2014. The scope of the review covered the following areas in respect of the Vector network:

1. The state of Vector’s electricity assets, with particular regard to maintenance programs and the appropriateness of expenditure levels;
2. Any need for the upgrading of Vector’s electricity assets, taking into account what is already being planned by Vector management;
3. The capacity of Vector’s electricity assets in relation to forecast demand;
4. Vector’s readiness to integrate changing technology, including potentially disruptive customer technology, in its network; and
5. Any security risks to Vector’s electricity assets.

The review was conducted primarily by Mr Scott Sidney from the Denver branch of PA’s Global Energy and Utilities practice. Mr Sidney has approximately 40 years technical and management experience in all aspects of electricity distribution network businesses. In a consulting capacity he has worked with over 100 utilities in 16 different countries, including electricity distribution businesses in New Zealand and Australia.

The key findings and conclusions from PA’s review and outlined in the State of the Electricity Network Report (2014) are summarized as follows:

- PA considers that Vector’s capital replacement, preventative and corrective maintenance programs are appropriate for the current reliability levels to be maintained over at least the next five years.

continued



- Vector's planning process embodied in its Asset Management Plans and supporting Network Standards are comprehensive and its electricity network asset management practices are generally in line with, and in some cases more advanced than those of comparable US utilities.
- PA notes that Vector's reliability has improved over the period 2009 to 2013, which is due at least in part due to the benign weather conditions over this period, but also reflects the targeted investment to improve reliability made in 2004/05 and 2006/07.
- PA considers Vector to be a high performing utility with low expenditure and strong reliability when compared to US utilities, Australian utilities and New Zealand electricity distribution businesses.
- PA finds Vector's overall approach toward security of supply and capacity planning to be sufficient to meet the targets under the current regulations.
- Vector is planning several major augmentation projects over the next 5 to 10 years to ensure that the good level of reliability is maintained across the network.
- PA considers Vector's approach to demand forecasting in reconciling a bottom-up forecast at zone substation level to a top-down econometric approach is appropriate to use for the current regulatory period. PA suggests regular updating of these demand forecast as the impact from the uptake of photo-voltaic and electric cars etc. becomes better understood.
- In PA's view Vector's evaluation of emerging technologies, including disruptive customer technology and smart solutions, and their potential impact on the network is entirely appropriate and will provide valuable input into the investment required for a future smart network.
- PA finds that the security of supply afforded to Vector's network is consistent with most US utilities.
- Overall the level of capacity and redundancy built into the network is sufficient to satisfy the needs of customers from a reliability perspective.
- PA considers that the basic risk processes and mitigation actions at Vector are generally ahead of US utilities in terms of identification, control, and level of detail maintained and would match industry best practice.

Yours faithfully,

A handwritten signature in black ink that reads 'Scott Sidney'.

Scott Sidney
PA Consulting Group